Course Information
Math 4354–001, Differential Equations II
Spring 2014
CRN 41916

January 14, 2014

Instructor: Prof. Lance D. Drager. Office: Math 236. Office Phone: 834-8161. If you let the office phone ring long enough, you'll get me or a voice mail system you can leave a message on. My e-mail address is `lance.drager@ttu.edu`.

Course materials will sometimes be posted on my web page, which is `http://www.math.ttu.edu/~drager`.

Announcements and Class Forum: This term we will be using Piazza for class discussion. The system is highly catered to getting you help fast and efficiently from classmates, the TA, and myself. Rather than emailing questions to the teaching staff, I encourage you to post your questions on Piazza. You can post a question anonymously, if you want. If you have any problems or feedback for the developers, email `team@piazza.com`. I will look at this at least once each business day.

Sign up for our site at `piazza.com/ttu/spring2014/math4354001`

Find our class page at:`piazza.com/ttu/spring2014/math4354001/home`

I will also post class announcements (including assignments) on Piazza, so check it to see what is happening.

If your message is not of general interest to the class, or you want to keep it private, send it to me privately or use my regular email (email address above).

There is a formula editor for generating and posting mathematical formulas in LaTeX. This is the standard system for doing math on computers in science and engineering, so it's worth learning about it. The Piazza help has a link to a tutorial, and there are many resources for LaTeX on the web (we only need to look at how to do formulas, not how to do a whole document).

Alternatively, if you search for online equation editors on the web, you'll find WYSIWYG editors with a mouse/menu interface that produce the LaTeX code for the formula, which you can then cut and paste into Piazza (put it between double dollar signs: $$ ... $$). Some of these editors also produce PNG or GIF files you can paste into email, if you need to do that. (If you use Thunderbird,

look for LaTeX plugins.) I can't really tell you which editor is the best. This is a topic the class may want to discuss.

Office Hours: MWF 2:00–4:00. You can come by outside of formal office hours; I'll usually have time to talk to you. Please feel free to come by if you need help.

Other Sources of Help: The Mathematics Department Office has a list of people who offer tutoring for pay. Forming informal study groups with other students can be very helpful.

Text: The text is D. G. Zill and W. S. Wright, **Differential Equations with Boundary-Value Problems, 8th Edition**, Cenage, 2012, ISBN 978-1111827069. We'll cover sections 8.1, 8.2, 10.1, 10.2, 11.1–11.3, 12.1–12.6, 12.8, 13.1–13.2, 14.1–14.4.

Technology: A TI-89 (or above) calculator is *required* on the inclass exams. We will also use the Maple software system, which you can access for free on University computers.

Learning Outcomes: Students will learn solution techniques for systems of ordinary differential equations. Students will also learn elements of Fourier series and how to apply these series in the solution of boundary value problems for partial differential equations, specifically, the heat equation, wave equation, and Laplaces equation in rectangular and other coordinate systems. In addition, students will obtain a general understanding of transform methods in the solution of initial and boundary value problems for partial differential equations.

Assessment of Learning Outcomes: The assessment of student's mastery of the skills and concepts as specified in the expected learning outcomes will occur, with appropriate course grades assigned, as follows:

1. 2 in-class exams.

2. 1 takehome exam

3. The final exam.

4. Exam corrections.

5. Homework.

The final and the exams are equally weighted. The lowest exam score will be dropped. This could be the score on the final. If you are satisfied with your score on the first three exams, you don't have to take the final or show up at the final exam session. If you don't take the final, the score will be a 0, which will be dropped. On the other hand, taking the final can't hurt your score. I will apply a curve to the scores on the exams.

The the exams will count for 50% of the final grade. The exam corrections will count for 15%, and the homework will count for 35%.

The 90-80-70-60 cut offs will be sufficient for the final grade, but the cutoffs may go a bit lower; I can't say until I see all the scores.

Some of the homework will be on the Webwork system, and some will be written, including things to do on the computer.

If you need help getting started on a problem you are highly encouraged to talk with me. You *may* discuss the homework problems with your classmates, but after understanding how to do it, go off by yourself and write up the assignment; don't just copy someone else's writeup.

Final Exam: The final exam is on Saturday, May 10, from 1:30pm to 4:00pm. It will be in our usual classroom.

Makeups: If you are absent from an exam and convince me that your reason was legitimate, I will give a makeup exam. For late homework I may require a serious, legitimate excuse.

Class Schedule: The tentative schedule for the class is as follows:

Jan. 16–Feb. 11 Chapters 8 & 10, Systems of Linear Equations and Plane Autonomous Systems.

Feb. 13–Feb. 27 Chapter 11, Fourier Series.

Feb. 18 Exam 1.

Feb. 27–April 3 Chapter 12, Boundary Value Problems in Rectangular Coordinates.

March 25 Exam 2.

April 3–April 22 Chapter 13, Boundary Value Problems in Other Coordinates.

April 22–May 6 Chapter 14, Integral Transforms.

May 6 Last Day of Class.

May 10 Final Exam, :30pm–4:00pm.

If these dates are changed, the changes will be discussed in class and will appear on the calendar on my website. However, **this document will not be changed**.

Class Attendance: To begin with, I will not count attendance towards the grade, although I may pass out a sign up sheet to check the class roll. Many studies show that class attendance is important in getting a good grade. *I will institute an attendance system if it seems necessary!*

Remember, you are responsible for all material covered in class and all announcements made in class or on Piazza. If you have to miss a class, you should check with Piazza and me or a classmate to see what happened.

Formative Assessment: Continuous formative assessment of the progress of the course will occur via ongoing communication between the instructor and the students. To this end, all students are encouraged to ask questions during class and to seek the instructor's help out of class when needed. Other activities

in support of student-instructor communication will include: practice exams and quizzes, review of homework, and personal interviews with students doing poorly on work assigned at the beginning of the course.

Identification: You should be prepared to show your Texas Tech picture ID at any quiz or exam.

Accommodations for Disabilities: Any student who, because of a disability, may require special arrangements in order to meet course requirements should contact the instructor as soon as possible to make necessary accommodations. Students should present appropriate verification from Disabled Student Services, Dean of Students Office (AccessTECH). No requirement exists that accommodations be made prior to completion of this approved University process.

Religious Holy Days: A student may be absent from class for a religious holy day, as legally defined, and will be allowed to make up any missed examination or assignment within a reasonable time after the absence. See `http://www.depts.ttu.edu/officialpublications/catalog/_AcademicsRegulations.php`

Academic Misconduct: It is the aim of the faculty of Texas Tech University to foster a spirit of complete honesty and a high standard of integrity. The attempt of students to present as their own work any work that they have not honestly preformed is regarded by the faculty and administration as a serious offense and renders the offenders liable to serious consequences, possibly suspension.

For more information, and a description of what is considered to be misconduct, see `http://www.depts.ttu.edu/officialpublications/catalog/_AcademicsRegulations.php`

Civility in the Classroom: Students are expected to assist in maintaining a classroom environment that is conducive to learning. In order to assure that all students have the opportunity to gain from time spent in class, unless otherwise approved by the instructor, students are prohibited from engaging in any other form of distraction. Inappropriate behavior in the classroom shall result, minimally, in a request to leave class.

For more information, see `http://www.depts.ttu.edu/officialpublications/catalog/_AcademicsRegulations.php`